WRIGHT-PATTERSON AIR FORCE BASE, AREA B,
BUILDING 67, AIR FORCE SUPPLY WAREHOUSE
DAYTON VIC.
GREENE COUNTY
OHIO

HAER No. OH-79-AF

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
P.O. Box 37127
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HISTORIC AMERICAN ENGINEERING RECORD

WRIGHT-PATTERSON AIR FORCE BASE, AREA B,
BUILDING 57, AIR FORCE SUPPLY WAREHOUSE
HAER No. OH-79-AF

Location: Long block between F and G, 3rd and 5th Streets; Wright-Patterson Air Force Base, Area B, Dayton Vicinity, Greene County, Ohio.

Date of Construction: 1942.

Present Owner: USAF.

Present Use: Aeronautical Systems Division. System Program Offices (SPOs) for Life Support, Aeronautical Equipment, and the Mark XV Identification Friend or Foe (IFF).

Significance: Although constructed fifteen years after the original Wright Field complex, this building exhibits the same style, enabling it to blend sympathetically with the surrounding architecture. Its multi-bay design allowed it to be easily converted from a warehouse to laboratory and offices. In the 1940s and '50s it housed the first computing facilities at Wright-Patterson Air Force Base.

Project History: This report is part of the overall Wright-Patterson Air Force Base, Area B documentation project conducted by HAER 1991-1993. See overview report, HAER No. OH-79, for a complete description of the project.

DESCRIPTION: The Army Air Forces Supply Warehouse (Building 57) is a one-story ten-bay building of six-course, American bond brick with a low-pitched roof, wide copper entablature and gables of steel-sashed windows. Between the bays are rectangular brick towers with octagonal bull's eyes with concrete surround. Most of the bays have double steel doors flanked by large windows in the same style as the gable, although some have been bricked up. On the north side is a newer entrance with glass and aluminum doors and a glass transom. The building is very similar in appearance to Building 56 to the west, except that Building 56 has an additional bay, and a railroad siding that is still used on occasion.

HISTORY: The approach of war in the early 1940s prompted the Army Air Forces to greatly expand its facilities at Wright Field. One new structure was an additional supply warehouse built in 1942, just to the east of the original warehouse. While not directly on the existing railroad tracks, this was the largest space near them, and an extra spur was laid to reach Building 57's loading dock.

From the beginning, Building 57 was not used exclusively as a warehouse, and, like Building 56, its function quickly began shifting from storage and supply to laboratories and offices. The Engineering Analysis Division Directorate of Laboratories occupied 20,000 square feet, over one-quarter of the building, after its completion in 1942. This organization is significant because it possessed the first computing facilities at Wright-Patterson Air Force Base, using them to conduct research in computing techniques.

The Digital Computation Facility opened in 1950 with a Remington Rand Univac 1103 electronic computer. This machine was estimated to be 100,000 times faster than a mechanical calculator. Later, this facility obtained an IBM 7090 computer that utilized transistor technology. The 7090 was twenty-five times faster than the 1103. The facility solved system dynamics problems for the Systems Management Directorate and also accomplished research in numerical analysis and automatic programming techniques.

The Analogue Computation Facility opened in February of 1959 to conduct both basic and applied research. The Facility developed and operated special analogue-type equipment to simulate and solve weapon system problems. This was a typical general task for early computers, but Wright-Patterson possessed a $3.5 million Reeves System Dynamic Simulator, one of the largest and most advanced computers of the time. It consisted of four different computers, called stations, which operated individually or collectively with a total of 500 computing amplifiers. To insure the validity of both problems and solutions, it included automatic features not available on previous machines, including automatic programming,

automatic voltage readouts, and automatic setting of functions, all of which increased efficiency by reducing the possibility of human error.

Inevitably these machines were superseded by newer, more advanced facilities in the 1960s. By that time, the remainder of the warehouse had also given way to offices and other laboratories, including the nuclear testing facility of the Materials Laboratory at the south end of the building. Since then the major occupants of Building 57 have been the Aeronautical Systems Division (ASD) System Program Offices (SPOs) for Life Support, Aeronautical Equipment, and the Mark XV Identification Friend or Foe (IFF).

For bibliography, see Wright-Patterson Air Force Base overview report (HAER No. OH-79).